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ABSTRACT

Suggestopaedia seems to be the only pedagogical approach using music as an integral part or essential component of the teaching process, in spite of the fact that the contribution of music to pedagogy and successful learning has been recognized for some time. In a suggestopaedic course, music plays a large part in creating a pleasant suggestive atmosphere, thereby facilitating the lessening or removal of anti-suggestive psychological barriers. This assumption is particularly applicable to adult foreign language classes. Music helps to create a state of receptiveness induced by an apparent state of passiveness associated with a state of psychological relaxation and concentration of superior cerebral activity. Because research has frequently shown the positive effects of music, it is possible to propose different hypotheses to explain the role of music in suggestopaedia. These hypotheses are also of interest because they may lead to research linking psychology and suggestopaedia. While it is not yet easy to determine the specific effects of music in a suggestopaedic approach, it seems that this approach, based on gestalt principles, answers some questions regarding the pedagogical use of the full capacity of the brain. Further research is necessary before specific information can be offered, but the systematic introduction of music into pedagogy has proven to be an innovation with numerous beneficial results. (Author/AMH)

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# MUSIC, PEDAGOGY, THERAPY:
# SUGGESTOPAEDIA.

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Abstract

The contribution of music to pedagogy and successful learning has been recognized for some time. However, to the best of our knowledge, suggestopaedia is the only pedagogical approach using music as an integral part of essential component of the teaching process. Music plays a large part (in a suggestopaedic course) in creating a pleasant suggestive atmosphere, thereby making it possible to overcome anti-suggestive psychological barriers or reduce their impact. Music helps to create a state of receptiveness induced by an apparent state of passiveness which is associated with a state of psychological relaxation and concentration of superior cerebral activity. The positive effects of music has frequently been showed through research and experiments. It's thus possible to propose different hypotheses to explain the role of music in suggestopaedia. All these hypotheses are of great interest since they may lead to research liking psychology and suggestopaedia (as well as physiology and suggestopaedia) and clarifying the role of integrated music in the learning process. It also seems that a suggestopaedic approach answers the questions or criticisms made by a number of researchers regarding the pedagogical use of the full capacity of the brain. It is not yet easy to determine the specific effects of music in a suggestopaedic approach. This is to be expected since this teaching system is based on gestalt principles, and therefore each element has a significance in relation to the other elements. Further research will have to be done in this area before more specific information can be offered. But the systematic introduction of music into pedagogy is undoubtedly an innovation with numerous beneficial results.

## Music, Pedagogy, Therapy: SUGGESTOPAEDIA

The contribution of music to pedagogy and successful learning has of course been recognized for some time. The findings of research projects and experiments in this area are listed in specialized bibliographies. However, although there have been considerable developments throughout the world in the field of melody therapy or music therapy, the same progress does not seem to have been made with respect to melopaedia or musicopaedia used with apparently "normal" students of all ages. To the best of our knowledge, suggestopaedia is the only pedagogical method using music as an integral part of essential component of the teaching process. Given that suggestopaedia is based on the findings of research and experiments in the field of psychotherapy, it does not appear paradoxical to refer to it in the context of music therapy. In the following pages, we shall offer a synthesis of the role of music in suggestopaedia, illustrating the numerous research projects being conducted in this area by just a few references.

Suggestopaedia is the results of research conducted by the Bulgarian doctor and psychiatrist, Georgi LOZANOV, who is currently Director of the Sofia Institute for Research in Suggestology. After practising psychotherapy for fifteen to twenty years and testing and proposing many original methods, Dr LOZANOV came to the following conclusion: irrespective of the method used, there are a number of factors behind success which are almost invariably the same. At the Fourth International Congress of Psychology and Psychotherapy in

Vienna in 1968 Dr LOZANOV presented a paper on his findings, the essence of which may be summarized as follows: "The results obtained (in psychotherapy) . . . confirm our view that there is a therapeutic mechanism common to most psychotherapeutic methods" (Lozanov, 1971, p 71).

Underlying these successes and this psycotherapeutic mechanism are factors which Dr LOZANOV termed "suggestive", or located on a subconscious (or hardly conscious) and non-rational level: "What is suggestive is that which is not conscious and rational . . ." (Lozanov, 1975, p 292). Although these suggestive factors play a significant role in our lives, they generally go unnoticed. The specific purpose of suggestology, or the science of suggestion, is to study the subconscious relationship between man and his environment and the effects of such messages. Although the signals which we receive from our environment are not perceived consciously, they are significant since "at all times and in all facets of communication we communicate with one another not only logically and consciously but also subconsciously and emotionally". (*ibid* p 282)

In specific communication situations, such as those between a doctor and patient or teacher and student, these suggestive elements assume particular importance. "And after working for about fifteen to twenty years as a psychotherapist, I still think there are some communicative factors in this psychotherapeutical communication which are the main points in getting some good results and extracting these suggestive results are taking part in all pedagogical processes" (*ibid.*)

From these few statements we can easily appreciate how Dr LOZANOV moved from psychotherapy to pedagogy; he conducted a wide-ranging and

in-depth analysis of the communication process and specifically the subconscious and emotional relationship found in treatment (doctor/patient) or learning (teacher/student) situations.

## The Arts and Music

This is a particularly rich area since the arts, in the broadest sense of the term, convey considerable suggestive values: "The fine arts are the highest form of suggestion. . . The arts indeed create a specific environment of an emotional nature which stimulates individual capacities and encreases receptiveness." (Racle, 1975, p 218). The arts must therefore be integrated into a suggestopaedic teaching method. The link between psychotherapy and pedagogy is that they both use suggestion - the direct path to the subconscious - to achieve the desired effect. As is to be expected, the arts, which convey considerable emotional values, play a role in suggestive pedagogy; by "suggestive pedagogy" we mean a teaching system integrating the principles of suggestology, which Dr LOZANOV has termed "suggestopaedia". Mime, singing, dramatic expression, artistic reading and rhythm are all included in the suggestopaedic learning process, as are concert recitals which are perhaps the best known artistic component of Lozanovian suggestopaedia.

We must appreciate the context in which music is used in suggestopaedia to understand its role in the teaching system. This element from the world of the arts combines with psychology and teaching to form a global pedagogical system, a "gestalt pedagogy" (Racle, 1977b) geared to the whole personality of the student. "This system is a global system. . . it is a global approach towards the personality. This globality is because of the global activation of the personality" (Lozanov, 1975, p 297). We should also mention that in 1965 Dr LOZANOV did in fact propose an integral psychotherapy which, when tested, proved successful.

"The use of music as an integral part of the suggestopaedic teaching method is based on experiments and developments in the field of music therapy.

Although the results of experiments in music therapy may be applied to some extent to suggestopaedia, it should be remembered that the latter poses new questions and new problems" (Lehman, 1973, p 264).

A special part of suggestopaedic language courses for adults is devoted to music. As the teacher reads the work to be covered in the lesson, music is played in the background. The teacher adjusts his voice to the volume of the music and also tries to follow the rhythm of the piece being played. Meanwhile, the students sit comfortably in their armchairs and listen. They are asked to pay attention to the music. The student is thus induced into a specific state which LOZANOV describes as "concert pseudopassiveness": "Through the music, the normal physical tension of the person listening gradually decreases" (p 265) and his receptiveness is increased. "The person listening is in a passive state and makes no intellectual effort to memorize or understand; he just lets himself perceive the music emotionally" (Lozanov, 1971, p 247).

Music plays a large part in creating a pleasant suggestive atmosphere, thereby making it possible to overcome anti-suggestive psychological barriers or reduce their impact. "A suitable choice of music can "open" the human mind psychologically" (Lehman, 1973, p 265). However, as Dr LOZANOV has stressed, music only acts in association with other recognized suggestive factors, such as prestige and credibility (of the teacher, the teaching system and so on), confidence and willingness (of the student) and structuring of the courses of two levels (conscious, subconscious).

## Role of the Concert

*Placebo effect*

As a placebo, the concert serves a number of purposes: its effect may be - and indeed is - related to the ritual way in which it is used and the association thus created with the memorizing process. (Lozanov, 1974). The significance of this factor, which has been frequently studied, is clearly recognized. However, the process may have been identified too closely with the absorption of a "fake" medicine. The effect of a placebo is not produced simply by using non-pharmaceutical products in place of real medicine. Its effectiveness is in fact proportionate to the effectiveness which the persons administering and receiving it attribute to it. The research carried out by Tom McGlashan, Martin Orne and Frederick Evans shows that the effectiveness of the placebo is influenced by the recipient's anxiety level, and that the latter's fear must be allayed as much as possible through both his own attitude to the placebo and the behaviour of the person administering it.

To date, not much research has been done on the use of music as a placebo. However, what is true of a medical placebo is equally true of an "educational placebo". "The placebo is everything except a parasite. The ritual of prescribing a product and all the non-specific factors involved in the trust-based relationship between the doctor and patient have a considerable curative effect. The placebo should be considered a standard part of the panoply of medicine" (Evans, 1974) or education. By the same token, it seems equally clear that such an effect exists only within a complex system of conscious/subconscious relations and that it does not act as an isolated element. As was briefly mentioned above, such a view is consistent with the theory and principles expressed by Dr. Lozanov.

*Concert pseudopassiveness*

The effectiveness of music in suggestopaedia cannot be simply explained away as being the result of a placebo. This is also the view of D. Lehman (1973): "...music, considered in the context of suggestopaedia, is not simply a sort of placebo, and ... in a number of individuals the effect of music transcends that of the placebo" (p 264). Lozanov (1974) himself also expresses this viewpoint: "Studies have shown that the concert performance plays a dual role: on the one hand it is a ritual placebo factor while, on the other, it creates a particular psychic state in the person listening."

Music helps to create a state of receptiveness induced by an apparent state of passiveness, which is in fact only pseudopassiveness associated with a state of psychological relaxation and concentration of superior cerebral activity. This use of music is probably one of the most useful and beneficial contributions of suggestopaedia: "Through a well-chosen piece of music the moral and physical tension of the person listening gradually drops and a process of psychological self-regulation is begun" (Lehman, 1973). Kohut (1957) had already pointed out that music can help to reduce internal tension and anxiety. Among the "ingredients" which Kuhner (1962) suggests to counteract his patients' anxiety and create a relaxed atmosphere are "a soft background of music" combined with a certain physical ambience created by the setting, all of which should be contained in an "empathetic" patient/doctor relationship. "All these tend toward developing stabilizing emotions such as emanate from feelings of acceptance, comfort, security and trust" (p 98). Ruiz and Pilon reached a similar conclusion in a comparative study: music therapy/ergotherapy (1969). The work of other researchers could also be cited in this context (Scott, 1960, Gabai-Jost, 1962). When a person listens to a concert, he quietly and passively notices the music and lets himself be emotionally "taken in" by it. This is obviously a mental state (Lozanov) free from fear, anxiety or anguish. This state of receptiveness helps us to memorize considerable amounts of information effortlessly. Music helps to create this pseudo-passive/receptive state, which is like one piece in a tightly constructed jigsaw puzzle. As Dr Lozanov has shown (1971), it is theoretically

possible to obtain an identical state of receptiveness without used music; this can be achieved by making full use of the suggestive effect of other parts of the course with the aid of teacher who is highly skilled in the suggestopaedic method. However, such methods are the exception, and music provides a simple way of facilitating memorization since it creates a highly suggestive atmosphere. It has also been found that music facilitates long-term memory (Lozanov, 1971, 1975).

The suggestopaedic learning system combines (particularly during concert sessions) apparent external passivity with intense internal overactivity; the latter is produced in the higher nervous system. It should be noted that the state in question is one of mental rather than physical relaxation. Many experiments (Lozanov, 1971, 1977) have shown that physical and muscular relaxation do not in themselves have any specific value ( since the results are related not to the relaxed state of the muscles but to the suggestion contained in the procedure).

Lehman speaks of opening the human mind to describe the same effect. It must be admitted that we do not yet appear to be able to explain all the mechanisms involved in producing this effect. However, we can appreciate the role of music in a suggestopaedic-type approach (and in many other cases also) by examining some key points in suggestopaedic theory.

The key concept behind suggestology and its numerous applications (suggestopaedia, suggestotherapy, psychogenic anesthesia and so on) is the idea of the double level, or recognition of the conscious/subconscious duality of the individual and the way he relates to his environment. "At all times and in all facts of communication we communicate with one another not only logically and consciously but also subconsciously and emotionally. This goes on unnoticed to use. For example, you are listening to my words right now, the logic of my words, but at the same time, more or less unconsciously you are accepting the intonation of my voice, my face, my behaviour, and many, many, many details, unnoticed to me and you, you have some feedback, psychological feedback, a control over the truth of the words I am speaking. You believe or don't believe me..." (Lozanov, 1975, p 286). The fact is that "everything on this second

level plays a considerably important role in teaching. It contributes to the creation of reinforcement of the student's confidence and the credibility of the professor. It facilitates the breaking down of barriers and the reaching of reserves. The teacher (in the case of learning) - like the doctor or the psychotherapist in other fields - must be perfectly aware of the double level and act with this in mind" (Racle, 1975, p 218). This is a fundamental point: everyone protects himself with psychological barriers, just as the organism protects itself with physiological barriers. There are three such barriers (rational, emotional and ethical anti-suggestives) to be overcome or neutralized in order to activate one's reserves. Thses barriers are not broken down by a head-on attack, which would be useless, but through the most subtle suggestion which, since it acts at the subconscious level though non-specific psychic reactions, neutralizes possible rejection and makes it possible to reach one's reserves.

Music plays a specific role in this double-level operation. "Music may act on the vegetative nervous system and penetrate the subconscious although the individual is paying no attention to it, for example through acoustic stimulants in the form of vocabulary; the individual is, therefore, not required to consciously perceive the music playing, or he may be only partly aware of it" (Lehman, 1973). This idea may be expressed another way. Some authors, such as Dupré and Nathan (1911), consider that the only, or almost the only, purpose of music is to take one's mind off things. Esquirol (1772-1840) wrote: "Although music does not cure, it does amuse and therefore comforts."

By retaining one's attention and playing a key role, music creates an emotional climate which has a suggestive effect on the hearer; it allays anti-suggestive reactions (tension, anxiety, agressiveness), neutralizes the specific action of anti-suggestive barriers, particularly the emotional barrier. At the same time, on the second level, the message (the content of the lesson) is read by the teacher; it directly penetrates the subconscious, where it is assimilated and stored. No intellectual effort is required to retain or understand: the student "calmly and intuitively gives himself up to the musical program presented" (Lozanov, 1973) while these complex processes are taking place in the higher nervous system. "Through this pseudopassiveness and the

suggestive approach which may be geared to overmemorization, for example, anti-suggestive barriers are overcome more easily and the individual's psychic possibilities, which are being held in reserve, are released." (*ibid*, p 32). "The role of music in suggestopaedia is to create in the individual a state of psychophysical perceptive harmony so as to make him, in so far as possible, responsive to the action of the suggestopaedic process..." (Lehmann, 1973). We therefore decrease tension through the music (psychological relaxation) and at the same time activate the mental processes (concentration). The positive effect of music has frequently been shown through research and experiments. "We noted (and this was confirmed by the results of opinion polls) that the use of music in a suggestopaedic course has the effect of generally improving the students' results and significantly increasing their ability to memorize" (Lehman ,1973, p 266): "Daily experience offers convincing evidence of the importance of the factors indicated (authority and pseudopassiveness) which, through a non-specific psychic reaction, increase the effectiveness of the learning process" (Puntchev, 1973).

"During the course we had a chance of truly assessing the effect of the music sessions. For instance, a student, who for some reason or other had missed one music session, failed to master the material given in it in such a way as he would have mastered it had he attended the session. The gap caused by the loss of this material was felt by him throughout the course" (Rabcsak, 1975, p 34). "The results of our experiments have shown that experimental subjects relax when listening to suitable music and take in and assimilate far more information than under normal circumstances. Mozart, Beethoven, Vivaldi, Corelli, Rachmaninov and Tchaikovsky have proved to be most suitable", as Dr Lozanov explained to a journalist in Sofia (Sofia News, 1974).

Concert pseudopassiveness "resembles the relaxed state in which children perceive the outside world" (Lozanov, 1973, p 31). This specific state had already been mentioned by Dr Markoff as early as 1938: "We attain a state of euphoria when we abandon traditional methods and allow our thoughts to run free... By suspending our objective critical faculties we can return to a primitive or childlike mental state." At the end of his *Analysis of Mnemonic Device* Bower (1970) offers a similar conclusion: "To end on a practical note, our prescription to the adult in approaching a new learning taks is for him to become as a child again, to tap the wellsprings of his supressed imaginative talents that have lain buried under years of linguistic development" (p 510). This state is in fact one of openness or receptiveness, which Lozanov terms" "infantilization" (Lozanov, 1971, 1973); it is simply a general psychic state of mind, created by the combination of all the suggestive factors present. The joint effect of music and other factors is to strengthen this state, thereby liberating "the plastic qualities of previous ages" (Lozanov 1973). Altshuler (1954), Assagioli (1965) and Van der Wall (1946) had already stressed the contribution which music can make to improving receptiveness to new stimuli by creating a state of relaxation. However, they did not give such an integrated and comprehensive explanation of the factors involved.

## Integration

As will have been appreciated, suggestopaedia makes music an integral part of the learning process itself, since it is one of the key elements in the memorization phase. This point is of considerable significance and interest. Music has been treated as a separate or isolated element in many experiments and research projects; it has been a peripheral phase or a later phase but not an integral part of the process itself.

For example, in their study on the "use of music and silence to increase hypnotic susceptibility" Talone, Steadman and Diamond (1973) had their subjects listen "to either ten minutes of recorded music or silence prior to a criterion hypnotic susceptibility scale." Miller (1974) used music as *a posteriori* reinforcement: "Learning the two treatment phases, experimental subjects meeting criterion were permitted to remain (in the specific classroom at the end of the arithmetic work period) and listen to either rock or music classics from a cassette tape recorder with headphones." The same type of experiment was conducted by Madsen-Forsythe (1973), Miller, Dorrow and Greer (1974), Madsen, Moore, Wagner and Yarbrough (1975) and other researchers (H.F. Galloway, 1975, and other bibliographies).

Music is apparently used to precondition the students (Talone *et al*) or to reward them after completing an assignment. The latter case obviously calls to mind Skinner's theory (Skinner 1971) on behaviour patterns and their consequences. The question is whether these research projects do any more than to seek "reinforcing" consequences, with a view to bringing about a change in behaviour patterns. In certain cases music would be, therefore, a more effective means of reinforcement than sweets (Madsen and Madsen 1972). However, it must be recognized that other effects were observed (for example, Zack 1951, Barrett 1965, Hanser 1972). With respect to preconditioning, it is interesting to note that Talone *et al* (1973) obtained identical results by using either music (or silence) or simply by the suggestive effect of the technique used. There is considerable similarity between this technique and the physical relaxation exercises used in certain teaching experiments (Benitez-Bordon-Schuster 1976, Petrelevicius 1975, Schuster 1976). Music seems to be used this way in certain music therapy methods. Guilhot-Jost (1964) use various sequences in which words and music are alternated: in dealing with the problems of a couple, for example the words are spoken alternately by a man and a woman, and then an extract from Wagner's *Parsifal*

is heard; the words are then spoken again, followed by an extract from Cesar Frank's *Panis Angelicus*; finally comes the complete *Parsifal* and a last reading (pp 129-133). The same structure is employed to help someone rid himself of a habit (Guilhot, Jost, Lecourt, 1973). However, Jost also proposes - although cautiously - combining music and words. "It is possible to superimpose music from the beginning so long as the work chosen is in perfect harmony with the words spoken ... This combination should not be overused but in certain cases it greatly enhances the emotional impact of the words and music" (1964, p 85). Gabai-Jost (1972) also stress the value of "word-music association" (p 66). Examples of this combination date back to time immemorial. Contenau (1939) cites various examples in his history of Assyrian and Babylonian medicine (A Machabey, 1945). Perhaps the history and the role of singing should be reexamined with reference to the incantatory, salutary, soothing, curative or memonic effects of rhythmical or litanic forms.

We can therefore appreciate how music is used in suggestopaedia although in this case the music is played and the lesson read at the same time. The lesson is read artistically and expressively; the teacher ensures that his voice is not louder than the music, stops speaking when there is a pause in the music and follows the melody and the rhythm of the music being played. "Free from all distractions which hamper its functions, the brain resembles a sponge, able to absorb all kinds of knowledge" (Tashev 1966). This vivid explanation made by Dr Lozanov undoubtedly explains why words and music are presented simultaneously. "By using the specific influence of music, which somehow reduces the self-control of many individuals and makes them more "open" to other people, neurotic defences can be removed, thereby helping patients in the group to communicate more freely" (Galinska 1967). The same idea is stated by Jost: "It is extraordinary (in music therapy)... to note how easily a group may communicate. This is of considerable interest from the therapeutic viewpoint and also as regards communication

and development" (Leroy, Dars, Jost, 1973, p 33). *Mutatis mutandis*, the findings of Jost and Galinska endorse those of Lozanov, particularly when Galinska states: "Music also seems to broaden the patient's perceptive faculties; he becomes more open to suggestions and accepts information more easily" (p 1040). We find here once again the "particular psychic state" (Lozanov, 1974) mentioned earlier - that combination of receptiveness (pseudopassiveness, infantilization, Lozanov, 1974) and stimulation of higher mental activity (Lozanov, 1971). We can therefore speak of a passive/active state or, to use the Lozanov-Novakov term (1973) a state of "active rest" (p 133).

## Hypotheses

If more was known about the neurophysiology of states of consciousness, these phenomena could certainly be explained. We know that "in the nervous system, stimulation is always accompanied by inhibition" (Deglin, 1976, p 32). However, the brain works best - particularly in learning situations - when stimulation processes and inhibition processes are harmonized: there is no opposition between states of vigilance and states of non-vigilance. Learning does not take place solely in a state of vigilance or in one of increased vigilance. Learning may occur in a state of "cerebral readiness": "This readiness disappears when there is a blockage, be it a blockage caused by overstimulation or by inhibition" (Chauchard, 1976, p 11). If an individual is overexcited he can neither concentrate nor sleep. "Although a person may want to pay attention, he cannot if he is tense; the same methods to achieve relaxation and combat nervousness are used to enable an individual both to concentrate and to sleep" (p 10). We must therefore avoid two extremes: blockage through nervousness or overstimulation and blockages caused by inhibition. In his studies on conditioning, Pavlov found that overgilance lead to excessive inhibitions and that dogs fell asleep when they were overvigilant. "We can appreciate, therefore, that an optimum state of cerebral inhibition is necessary for successful teaching, particularly in today's world with its prevalence of nervous fatigue. As we unfortunately tend to become tense and overvigilant, thereby becoming blocked, we must use relaxation methods to return to

the optimum state" (p 12). This is precisely the contribution of music in a suggestopaedic course; what Lozanov wants - "a set up similar to that of attending a concert" - is curiously close to Chauchard's view: "The vigilant aspect of a calm and relaxed presence free from worry or anxiety, this state of alertness enjoyed by the individual who is more alert and more receptive since he is not nervous" (*ibid*) Balevski expresses the same idea very clearly: "The higher forms of attention are not related to the generalized excitement of the cortex but to the inhibiting processes of needless reactions and, as N Livanov has shown, to an increase in the number of cerebral areas acting in harmony" (1976). Balevski's research (1975, 1976, 1977) has shown that in normal memorizing conditions people who speed up their cerebral biolectrical activity from fifteen to twenty per cent record the highest percentage of words memorized. A further increase in tension has the effect of decreasing the percentage of words memorized: "For more efficient memorization, optimal tension and not maximum tension of the brain cells must be obtained." In the case of memorization in suggestopaedic conditions (intonative reading with music in the background), optimal memorization is provided through an increase from five to ten per cent in cerebral biolectric activity. Here, nervous energy is saved; the predominant factor is "the process of inhibition and not the process of intense stimulation." We are witnessing that state "of psychic relaxation which creates optimal conditions for sustaining selective attention. This is the explanation of the psychohygienic effect, which is based on the suggestopaedic system of study." Lozanov, Balevski, Stomonyakov (1973) noted that: "During the concert session the alpha system of the majority of course members increases above the initial level before class, and the beta-rythm drops under the initial data." Noncheva (1975) made a similar finding: "During the session, although the presentation of study material continued, the excitability of the cerebral cortex decreased in comparison with the data before classes." This would explain the role of music in suggestopaedia. "A sound pedagogical method requires an optimum of inhibition which removes oppressiveness without affecting awareness. The prototype here is the

painless childbirth method, where in opposition to the method of childbirth under hypnosis the mother remains actively aware, and reassured by explanations takes cerebral control of the birth" (Chauchard, 1976, p 13).

The prototype of this is also the suggestopaedic approach developed by Dr Lozanov, where music is certainly one of the most original and effective components. In this context, we might quote Chauchard once again: "Thus cerebral physiology fits in perfectly with psychology to explain suggestive reactions" (1974).

However, we must also relate the role of music to the specific activities of the hemispheres of the brain: when a new lesson is read by the teacher, classical music is played in the background. The students are asked to pay attention to the music. This should activate the right hemisphere (Bogen, 1975) and, conversely, relax the left hemisphere, thereby facilitating reception of the linguistic message in accordance with the mechanism mentioned above (Balevski, 1976). The simultaneous presentation of two elements which, theoretically, are the speciality of their respective hemispheres, enables the brain to call upon all its resources to assimilate new data. Bogen (1975) asks: "Can we reasonably hope that many hours devoted to the practice of bonsai, ikebana, stitchery, dance and sculpture will increase the effectiveness of the necessarily decreased time available for courses in physics, forensics, philosophy and the like? This hope assumes a facilitatory interaction between the two modes of ideation" (p 30). The author concludes that "Such a mutually beneficial reinforcement seems a reasonable expectation." However, in this case, the action would be simultaneous and not consecutive; this brings us back to the aforementioned principle of integration, which Dr Lozanov considers fundamental: "The artistic means used in suggestopaedia... are not an illustration in the learning process rather they are integrated into the content of the program" (1973). But it was Bogen himself who opened the way when he wrote: "On the one hand, our belief that hemispheric specialization tends to be process specific

rather than material specific suggests that subject matter may be less important than method of presentation." Luthe (1976) states: "Since the technical emphasis on right hemispheric nonverbal work in many instances constitutes a reversal of the habitual pattern of left hemispheric work, the CMT* program may also help to indirectly enhance the functional relations between both hemispheres (ie interhemispheric connections)" (p 7), and this view supported by the findings of a number of researchers (Bogen 1969, Dusewicz 1968, Galin-Ornstein 1973 and others). We might therefore consider that the musical presentation method used in suggestopaedia promotes the specific activity of each hemisphere; it also facilitates global activity, which is probably associative. As "memory is a set of heterogeneous mechanisms" (Lieury 1975), participation by the two hemispheres would make it possible to achieve more associations.

It may be interesting to note that some teaching methods endeavour to create - specifically and sometimes artificially - multiple association. Curran (1976), who has followed the line taken by Eccles (1966) and Goldstein (1963), tries to reconcile movement, colour and sound: "Hence the more a particular spatiotemporal pattern of impulses is replaced in the cortex, the more effective becomes its synopsis relative to offers" (Eccles, quoted by Curran, p 79). Velvosky (1973) had already noted that the use of the musical, tonal and declamatory mandrin channelled information toward specific zones in the cortex and that the diversity of information transmission methods facilitated "the creation of engrams not only in clearly determined functional zones but also in their constellations, thereby forming supports for multiple ramifications in the memory structure" (p89). Gravilenko, Kireeva *et al* (1974) noted, on the one hand, the existence of unconscious hypermnesia produced by the part of the global message perceived through the subsensorial, intuitive and emotional channels, and on the other hand, the need to avoid obsessive intellectualization caused by an overly reasoned assimilation of modes and structures, since the latter is a serious handicap to acquiring a language, as is overly intuitive memorization. By presenting the lesson content musically, both hemispheres are used since both voluntary and involuntary memorization are ensured

*CMT: Creativity Mobilization Technique

(Balevski 1976). The following statement by Fischer serves to illustrate the opposition and the link between purely rational and purely intuitive learning: "While a hemisphere-specific task is solved by the appropriate hemisphere, the activity of the other is repressed or inhibited. Moreover, Aristotelian logic and language may be interhemispherically integrated with Platonic imagery. But when levels of subcortical arousal are raised (as during creative, hyperphrenic, catatonic and ecstatic states) or become lowered (as in the hypo-aroused meditative states), there is a gradual shift of information processing from the Aristotelian to the Platonic (cortical) hemisphere." The same view is expressed, although differently, by Hecaen: "in fact.... the real difference between the two hemispheres is a functional difference which reflects a different ability to process information" (1977, p 243). "It is important to emphasize that what most characterizes the hemispheres is not that they are specialized to work with different types of material (the left with words and the right with spatial forms); rather, each hemisphere is specialized for a different cognitive style; the left for an analytic, logical mode for which words are an excellent tool, and the right for a holistic, gestalt mode, which happens to be particularly suitable for spatial relations" (Galin, 1976). As music creates the aforementioned specific state, it enables both hemispheres to use their own functional capacities. "A really fine and harmonious interplay between the two (hemispheres) can work perfectly in a succession rhythm: intuitional insight, interpretation, further insight and its interpretation tation, an so on" (Assagioli, 1971). Einstein spoke of "combinatory play". Suggestopaedia, and specifically the musical presentation of lessons which combines two seemingly opposed aspects, is one of the first examples of a pedagogical method which takes into account the dual nature of the brain and no longer considers that the human mind functions as a unified whole. In this sense Lozanov might be compared with Lashley (1958), "an exceptional psychologist" (Bogen 1964), who wished to recognize the duality of the brain in psychological matters. A further point should perhaps be made: "Through modern anatomical and physiological data, we can formulate the principle of the vertical structure of functional cerebral systems, according to which any form of behaviour is ensured by

the collective work of the various levels of the nervous system. The cerebral cortex is not the only substrate of the physical processes" (Balevski, 1976, p 24). The existence of vertical links essential to the proper functioning of the brain has been shown. Through the ascending links between subcortical functions and the cerebral cortex, the excitability threshold of nervous cells can be modified. In fact "recent anatomical and physiological studies partly explain the role in memory of the hippocampus, the nucleus amygdalae, mamillary bodies and other structures from this region" (Lieury, 1975, p 224-225). This complex system of nuclei and channelling of nervous influxes can be considered a "true basic brain of behaviour". The whole structure is linked to the centres of vigilance (reticular formation), emotional development (limbic circumvolution), cognitive development (frontal lobes). "It has been shown that these formations are of considerable importance in the formation of readiness in accordance with needs, the programming of acts, and in motivation, the emotions etc" (Balevski, p 25). Chauchard (1973) makes a similar point: "Man's associative zones are so developed that they go beyond the premotor frontal zone, thereby constituting a supplementary brain, the last stage in evolution. It is the complex circuits of the prefrontal brain which - if one has learned to use them - co-ordinate the emotional and the rational, thereby enabling man to attain his full capacity for responsibility and thought. We do not of course locate the higher psychological qualities - only the existence of co-ordinating circuits - in the prefrontal neurons. A process such as memory involves the participation of all three brains" (p 39). Chauchard recognizes, moreover, that in practice man "does not use his brain to its full capacity", and that the two brains - the primitive emotional brain and the superior rational brain - are more often dissociated than associated.

It is possible, therefore, that music helps to create an emotional state which uses physiological channels to provoke a behavioural reaction. "It seems, in fact, that the centres in the regions deriving from the embryonic paleopallium (the primitive cortex), particularly

the hippocampus region and its gyrus, contain the great emotional patterns" (Morin, 1974, p 83). Emotional action may also affect this complex set of structures and may also be used for psychotherapeutic treatment (Renaud, 1975) as well as for a pedagogical "treatment" (Balevski, 1976). Balevski noted that when classical music is played "the theta waves expressing emotions increase slightly". Gabai and Jost (1972) used first a microplethysmograph and subsequently an electroencephalograph in their research and noted a drop in the level of vigilance and the appearance of "generalized sudden increases in theta rates" which gradually became longer. Simonov thought that an emotional state arising under the influence of the motivation system promotes the superior activity of the brain. Therefore, the emotions experienced may help a person to memorize better. All these hypotheses are of great interest since they may lead to research linking psychology and suggestopaedia and clarifying the role of integrated music in the learning process. It also seems that a suggestopaedic approach answers the questions or criticism made by a number of researchers regarding the pedagogical use of the full capacity of the brain (Sperri, Katz, Luthe, Ornstein, Grady, 1976, Minstzberg, 1976), which Bogen (1975b) expressed thus: "How can our teaching methods be improved for the immediate, effective encouragement of the right hemisphere?"

## Musical Programs

The use of music is not, of course, in itself a valid criterion. "The search for other than left hemisphere values has not only provided the appearance of art in unfamiliar places, but has also produced a lot of kookiness from sources all too familiar" (Bogen, 1975). Not all music automatically produces the desired effect: "Music whose effect is read vertically like so many bars on a cage which the notes, marshmallows and lollipops gently grip or with which they clash like powerless and uncontrolled hammers. Music which sets your teeth on edge (and not only in the dentist's waiting room). Music which buzzes and leaves cavities... gaps in your head, holes in your walled and locks in your ears. Music made to drain you of any resistance or desire. Music-pollution inherent in

certain types of consumption. Does music temper one's habits? This type of music softens them" (*Perspectives*, 1977).

This vivid, scathing language reflects a discovery first made in ancient times and often repeated since then. Plato spoke of harmonies which are "plaintive, soft and suitable for banquets" (III 398e) and Aristotle noted the following: "From earliest times there have been essential differences between musical modes, and thus listeners are affected in different ways and do not experience the same feelings toward each mode: some music, such as the mixoludian mode for example, is listened to in a serious and sad state of mind, while others such as relaxed modes, require a softer state of mind. It seems that only with the dorian mode is the soul plunged into a middle state and at its most stable, whereas the phrygian mode makes the listener enthusiastic" (VIII, 5, 1340 a-b). Gaston (1968) drew attention to another aspect of the influence of music: "The music in supermarkets in checkout counters, the music and yells (chants) at athletic events, church music, dance music, and music in crowded elevators are examples of attempts to control behaviour by music" (p 19). Much has, of course, been written on the psychophysiological influences of music: Diserens (1926), Schoen (1927), Van de Wall (1936), to name only a few, are some of the writers of the last few decades. In *Actualité et Développement de la Musicothérapie* (Guilhot-Jost, 1973), Lecourt makes a significant remark (p 37): "When music is used as an environmental element conditioning human activity, as is the case with functional music and certain therapeutic applications, it is important that its power be controlled at the deontological, physical and psychological levels since, as Stockhausen pointed out (1971): "...You can act on a human being's "electrical" sensitivity through sound waves. If you simply broadcast a certain piece of music for twelve hours a day on the radio, one day, without knowing why, men will march and die for liberty on behalf of heaven knows what" (p 117).

At the Sofia Institute for Research in Suggestology the musical programs are, therefore, first presented to the students in a

laboratory. The music is chosen not for its physical properties (Lozanov, 1977) but for its psychological, pedagogical and physiological effects. Checks are made to ascertain its positice effect on the morale of individuals and its ability to provide psychological relaxation, that is a state of pseudopassiveness accompanied by relaxation. Generally speaking, classical or preclassical music programs are found to be most successful in this respect. Contained below is an example of the musical program used in Sofia when presenting the ten lessons in a language course for beginners.

1 A Joseph Haydn - Symphony No 67, F major
- Symphony No 68, B major

B Archangelo Corelli - Concerti grossi Op. 6 No 4-10-11-12

2 A J. Haydn - Concert for Violins and Strings
-1, C major
2, G major

B J.S. Bach - Symphony in C major
- Symphony in D major

J.C. Bach - Symphony in G minor Op 6 No 6

W.F. Bach - Symphony in D minor

K.P.E.Bach- Symphony No 2 for strings

3 A W.A. Mozart - Symphony Hafner, German dances and Prag - Symphony

B G.F. Haendel - Concert for Organ with Orchestra, F major Op. 4 No 4

J.S. Bach - Choral Prelude, A major - Relude & Fugue in G minor

4 A W.A. Mozart - Violin Concerto, A major, (Yehudi Menuhin)

B J.S. Bach - Fantasia in G major
- Fantasia in C minor
- Trio in D minor
- Canonic variations and toccatas, E major

5 A L.V. Beethoven - Concert for Piano and Orchestra No 5, in E flat major

B Vivaldi - 5 concerts for flute and chamber orchestra

6 A L.V. Beethoven - concerts for violin and orchestra in D major, Op 61

B A. Corelli - Concerti grossi, Op. 6, no 2-8-5-9-

| | | |
|---|---|---|
| 7 | A | P.I. Tchaikovsky - Concert no 1, in B flat minor, for Piano and orchestra |
| | B | G.F. Handel, Water music |
| 8 | A | J. Brahms - Concert for Violins and Orchestra in D major Op 77 |
| | B | F. Couperin, Parnasse & Starsonata in G minor<br>J.P. Rameau, Concert Pieces for Clavecin, no 1-5 |
| 9 | A | F. Chopin, Waltzes |
| | B | G.F. Handel, Concerti Grossi - Op 3 No 1-2-3-4 |
| 10 | A | W.A. Mozart - Concert No 18 in B flat major for piano and orchestra |
| | B | A. Vivaldi, Four seasons |

## Effects

It is not always easy to determine the specific effects of music in the suggestopaedic approach. This is to be expected since the teaching system is based on gestalt principles, and therefore each element has a significance in relation to the other elements. We have quoted above a number of general findings. Some research has shown that music had a particular effect on long-term memory: "The material obtained during the concert session is memorized for a longer period of time" (Lozanov, 1975, p 249). However, music also appears to facilitate short-term memorization (Ganovski 1975). Further research will have to be done in this area before more specific information can be offered. However, the hypotheses considered above undoubtedly explain this increase in memorization, which is a global result of the suggestopaedic approach.

We should also ask whether music has other beneficial effects in addition to its major contribution to memorization. As we have seen, experiments in psychotherapy have shown that music facilitates group relations and communication. This was one of the findings with groups learning a language through the suggestopaedic method. A group is created,

becomes very strong and the members of the group communicate very easily. Communication is also established very easily with people outside the group. In contrast to what happens with normal methods, students learning through the suggestopaedic approach are neither afraid to speak nor fear the people speaking with them; rather they find that they feel very relaxed. Could music have anything to do with this? This point has not been ascertained as such. Obviously, these effects are not produced by the music alone. However, as part of a gestalt approach, it might help to produce these results, thereby confirming the findings of music therapy.

One other interesting point should be made, although the specific role of music has not been determined: the therapeutic effect of suggestopaedic courses. It has been found that suggestopaedia has a very beneficial effect on the intellectual capacity of students, even if they were suffering from neurotic problems (Lozanov, 1967a, 1971, Balevski, 1968, Lozanov, Balevski, Stomonyakov, 1970). Kolarova (1973a) found that suggestopaedia had a beneficial effect on hysterical or neurasthenic neuroses. "Particularly, "the so-called" concert pseudopassiveness" (G Lozanov), associated with the ritual of the session, the feeling of freshness and the rest at the end of the lesson have a psychotherapeutical effect on all the persons observed. Music also has an uninhibiting, relaxing, appeasing effect on this background for many persons" (Kolarova, 1973a, p 383).

Hence the idea of using suggestopaedia as a therapeutic method (Kolarova, 1973a, Kolarova, Balevski, 1973, Kolarova, Sharankov, 1975). Velvovsky (1975) noted that an experiment conducted at Kharkhov showed that "the effect of the course on persons with neurosis was typical of a successful course of psychotherapy, namely, the disappearance of headache, irritability and depression, and the appearance of a good appetite, sound sleep and cheerful self-confidence" (p 18). In the same paper, Velvovsky specifically stresses the importance of music: "In the method created by G Lozanov (we are very much tempted to say - in the system of psycho-hygienopaedia), the musical passages do not block the reception of the information and have an enormous invigorative effect" (p 20),

## Conclusion

As can be seen from these few pages, the systematic introduction of music into pedagogy is undoubtedly an innovation with numerous beneficial results. More research remains to be done and more hypotheses to be checked. "The results of suggestopaedic learning process transcend the mere acquisition of new knowledge. The suggestopaedic approach focusses on the whole person and thus contributes to his complete development. Not only can psychological or psychosomatic problems be resolved (headaches, stomach cramps, anxiety, aggression and other complaints have been found to disappear); but the student's personality is seen to develop (he becomes more self-assured, more creative and expresses himself more easily). Moreover, we are obviously only at the initial stage of a promising program. With greater knowledge of suggestological theories, more experiments and better dissemination of information, the beneficial effects and humanistic influence of a suggestopaedic education will increase". (Racle, 1977c p 9). "Science may in the future find a way of using musical stimuli more radically so as to activate man's creative resources" (Leonidov, 1965). We can be sure that music still has many surprises in store for us.

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